

REMARKS

Claims 47-72 are pending in this application. Claims 1-46 have been canceled and replaced with claims 47-72.

The present application is a continuation-in-part of U.S. Application Serial No. 10/618,113, filed on July 11, 2003 (the "Parent Application"). Claims 1-46 have been canceled and replaced with new claims 47-72 to incorporate the subject matter of the Parent Application into the present application.

Rejection under 35 U.S.C. §103

The canceled claims were rejected under 35 U.S.C. § 103 as being unpatentable over Shibata (U.S. Patent No. 6,461,890) in view of U.S. Patent No. 6,223,429 to Kaneda et al. ("Kaneda").

Applicant believes that is it unlikely that the Office can substantiate that new claims 47-72 would have been obvious to the skilled artisan in light of the combined teachings of Shibata and Kaneda. New claims 47-72 are directed to wafer-level chip scale semiconductor packages, and electronic apparatus containing such packages, that contain a substrate with a chip pad, a re-distributed line (RDL) pattern on the chip pad, an insulating layer containing a non-polymeric dielectric material that covers a portion of the RDL pattern, a stud bump located on the portion of the RDL pattern not covered by the insulating layer, a leadframe substrate containing a bond pad, and an adhesive material containing conductive particles located between the substrate and the leadframe substrate.

In particular, it is unlikely that the Office can substantiate that the combination of the prior art references suggests forming a re-distributed line (RDL) pattern on the chip pad. It is also unlikely that the Office can substantiate that the combination of the prior art references suggests an insulating layer containing a non-polymeric dielectric material that covers a portion of the RDL pattern. Nor is it likely that the Office could substantiate that the combination of the prior art references suggests a stud bump located on the portion of the RDL pattern not covered by the insulating layer.

And for the reasons previously of record, the Office has not shown that the combination of references suggests that the conductive particles comprise metal with an insulating layer. The Office argues that since Kaneda teaches that the use of an insulated conductive particle improves the insulation in the lateral direction and, therefore, the one-way conduction can be improved by the use of an insulated conductive particle. But such an argument continues to ignore the fact that the very same prior art (Kaneda) that teaches such a feature also describes that it is not needed. And if not needed, why would the skilled artisan have been motivated to include it? Indeed, the skilled artisan would have been motivated to not use it since such a modification would have increased the cost and complexity of making the conductive particles of Shibata because of the additional step of forming a thin organic insulating film around the metal particle. The Office's proposed modification would also have to be questioned since the Office has not substantiated that the methods used by Shibata to form the connection between the terminals and conductive particles would have been able to break the insulating layer that would have to be added to the conductive particles of Shibata by the Office's proposed modification.

Finally, for the previous reasons of record, the Office has not shown that the combination of references suggests that the stud bump comprises Cu, as recited in some of the dependent

claims. The Office argues that it would have been obvious to replace the Au material disclosed column 7, lines 45+ in Shibata with a Cu material because Cu can form a eutectic alloy, such as Al/Cu and Sn/Ag/Cu alloys. But the Office provides no evidence to support such arguments.

CONCLUSION

For the above reasons, as well as those of record, Applicant respectfully requests the Office to allow the pending claims. Applicant also respectfully requests an interview with the Examiner prior to issuance of another Office Action on the merits.

If there is any fee due in connection with the filing of this Amendment, including a fee for any extension of time not accounted for above, please charge the fee to our Deposit Account No. 50-0843.

Respectfully Submitted,

By _____
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